Aalto University
School of Business

THE ADOPTION OF IN-STORE MOBILE PAYMENT IN FINLAND

Qualitative study to understand the attitudes of young consumers

Bachelor's Thesis
Maria Karesoja
Aalto University School of Business
Information and Service Management
Fall 2020

Aalto University
School of Business

Aalto University, P.O. BOX 11000, 00076 AALTO
www.aalto.fi

Abstract of Bachelor's thesis

Author Maria Karesoja

Title of thesis The adoption of in-store mobile payment in Finland

Degree Bachelor's degree

Degree programme Information and Service Management

Thesis advisor(s) Riitta Hekkala

Year of approval 2020 **Number of pages** 21+8 **Language** English

Abstract

Payment industry is rapidly evolving but consumers are still hesitant towards current payment trends, like mobile payment. Finland is behind otherwise similar Nordic countries in the adoption of in-store mobile payment. The objective of this thesis is to find out, what are the key factors influencing the adoption of in-store mobile payment among young, specifically generation Z, consumers. It also aims to find out if the ongoing Covid-19 pandemic has had an impact on attitudes towards in-store mobile payment.

A qualitative research in the form of three interviews was conducted to reach the research objectives. Three different kinds of in-store mobile payment users between the ages of 18 and 25 were interviewed. One has never used in-store mobile payment, one uses it occasionally and one on a daily basis. The questions considered the following factors, drawn from previous research: perceived ease of use, perceived usefulness, social influence, personal innovativeness, intention to recommend, perceived risk and perceived hygiene.

Perceived risk was found to be the largest inhibitor of in-store mobile payment adoption. Security concerns like the device getting lost or stolen as well as hackers and misuse came up the most. Additionally, uncertainty about the performance of mobile payment was a barrier for one interviewee. Another significant barrier for mobile payment adoption is the attitude towards contactless card payment which is seen as convenient enough, reducing the will to try mobile payment. Social influence, and specifically the recommendation of others was found significant as a motivator for use. Personal innovativeness was found to be somewhat significant but less so than social influence.

This is among the first mobile payment adoption research to consider perceived hygiene and the context of Covid-19. While perceived hygiene was found insignificant in mobile payment adoption in this research, it should be studied more with a larger sample. The most valuable measures mobile payment service providers can take, is to market the advantages of mobile payment over contactless card payment and raise consumer knowledge about the method. As security concerns make consumers hesitant towards in-store mobile payments, service providers should also increase awareness of the security measures taken. It was also found that additional services like bonus cards and consumption tracking would motivate consumers to use in-store mobile payment more.

Keywords in-store mobile payment, consumer adoption, generation z, Finnish consumers

Table of Contents

List of Figures

List of Tables

1 Introduction

Banking and payments are evolving at a great pace with money starting to be invisible and non-financial organisations creating financial services. The future of biometric payments and utilising blockchain is already approaching (Nets, 2020), but consumers are still hesitant towards current payment trends. Finland is behind otherwise similar Nordic countries, Norway, Denmark and Sweden, by a lot in adopting in-store mobile payment. In 2018 only 34% of Danish people had never used their mobile phone to make an in-store payment. Norway and Sweden had similar figures while in Finland 76% had never utilized mobile payment in-store (Deloitte, 2019). Otherwise the four countries have very similar payment trends: all are heading towards a cashless society (Deloitte, 2019) and contactless card payments are increasingly used (Nets, 2020).

Information about why Finland is lagging will benefit the mobile payment service providers, financial institutions as well as stores in which mobile payment is used. Knowing the key factors behind in-store mobile payment resistance can help companies adjust marketing strategies in Finland. Additionally, similar attitudes may very well apply in adopting other payment methods later on, making this thesis also valuable for future research.

The current Covid-19 pandemic seems to have had an impact on consumers' payment habits. MobilePay was used in S-group's cash registers 57% more in May 2020 compared to January 2020 (MobilePay, 2020). However, as the situation is still ongoing, the extent of this change is yet to be seen. The hygienic nature of contactless payments might be the reason behind an increased in-store mobile payment usage during the pandemic (Sreelakshmi et al. 2020). Because of the novelty of the situation, it is worth researching if Covid-19 has in fact changed attitudes towards mobile payment.

Consumer adoption of mobile payment is a well-researched area. The earliest research dates back twenty years and a lot of research regarding the topic has been conducted ever since. Previous research is largely based on the Technology Acceptance Model (Davis, 1989), the Unified Theory of Acceptance and Use of Technology (Venkatesh et al. 2003) and the theory on the Diffusion of Innovations (Rogers, 1962). Much of the previous research has been conducted in the form of quantitative surveys, which are very useful in making general conclusions. This qualitative research will try to gain a deeper understanding of consumers' attitudes regarding the previously found factors behind adoption.

A lot of the more recent research is country-specific, yet not a lot of it discusses the Finnish market. While understanding the factors impacting the adoption of mobile payment in other countries can be very useful, it is also valuable to conduct similar studies in Finland. Additionally, most of the previous research discusses mobile payment solutions in general. There are however differences in the adoption of different forms of mobile payment, in-store payment being the least accepted in Finland (Deloitte, 2019).

Furthermore, there is not a lot of research focusing on Generation Z. Consumers of this generation are tech-savvy and use mobile devices and applications daily (Grail Research, 2010). If these so-called digi-natives are not adopting in-store mobile payment, we cannot expect the older generations to do so. Information about the attitudes of these young consumers is valuable to mobile payment service providers so that they can adjust their marketing strategies to better reach this very potential user group.

1.1 Research objectives and research questions

The main objective of this research is to gain an understanding of the attitudes of young Finnish consumers towards in-store mobile payment. After finding out the underlying attitudes I hope to be able to recognise the key factors that are slowing Finnish consumers down when it comes to adopting in-store mobile payment. Lastly I wish to learn if the ongoing coronavirus pandemic has had an impact on consumer attitudes.

The exact research questions of my thesis are the following:

RQ1: What are the key factors influencing the adoption of in-store mobile payment in Finland among young consumers?

RQ2: Has the coronavirus pandemic impacted the attitudes of young consumers towards in-store mobile payment in Finland?

1.2 Scope of research

This research will focus solely on in-store mobile payment. Other types of mobile payment, such as peer-to-peer payment or paying for online purchases with mobile will not be discussed. The research focuses only on consumer attitudes and does not discuss the side of the service providers.

In addition to focusing only on consumer views, this thesis discusses the attitudes of young consumers, between the ages of 18 and 25. The reasoning behind this sampling will be discussed in depth in the Methodology section.

1.3 Structure of the research

The rest of this thesis will be structured as follows. First in the Theoretical background I will define mobile payment, briefly go through the technology behind it and discuss the advantages and concerns regarding mobile payment. After that I will give an overview of the most significant theories that have impacted later research on mobile payment adoption and then take a deeper look at previous research on consumer adoption.

In the 3rd chapter I will explain the reasoning for conducting interviews and the chosen sampling as well as the analysis method. The 4th chapter will first take a look at the results of each interview separately and then summarise the findings. Lastly in chapter 5 the thesis will be concluded and the implications and limitations as well as potential for future research will be discussed.

2 Theoretical background

2.1 Mobile payment

Mobile payment is a broad term that has been defined in different ways in previous research. For the purpose of this research we can define mobile payment as such when a mobile device is used to initiate, authorize, and complete a financial transaction in return for goods and services (Au & Kauffman, 2008). Mobile payment has many forms which all showcase the aforementioned characteristic: account transfers, person to person transfers, remote payments to purchase goods and services, proximity payments at the point of sale (POS) and other kinds of services (Oliveira et al. 2016). This research focuses specifically on proximity payment at the POS or in other words, in-store mobile payment.

Most in-store mobile payment services utilize the Near Field Communication (NFC) technology and can be identified as "contactless payments in which the payment credential is stored in the mobile device and is exchanged over the air, based on NFC technology" (ISACA, 2011). In some instances customers are also able to pay by scanning a QR code or by using Bluetooth technology (Kerviler et al. 2016).

The high usage of mobile devices as well as their proximity to the user (Mallat, 2007) makes mobile payment convenient as paying is possible without a physical wallet. Convenience and speed can be considered the biggest advantages for consumers (Oliveira et al. 2016). Karsen et al. (2019) pointed out that queues due to cash usage could be avoided with a higher usage of mobile payment. However, as the usage of cash is diminishing and contactless card payments are widely used in Finland (Deloitte, 2019), these benefits might not be visible to Finnish consumers.

The most significant concerns regarding mobile payment services are perceived security risks (Beutin & Harmsen, 2019; Karsen et al. 2019). Security risks with mobile payment can entail losing the device, the device getting stolen, hackers and misuse or unsecure transactions. Some consumers also see mobile payment as an opportunity for identity theft as plenty of confidential personal information is shared (Beutin & Harmsen, 2019).

2.2 Theoretical basis for mobile payment research

Most research about the consumer adoption of mobile payment is based on the Technology Acceptance Model (Davis, 1989), the Unified Theory of Acceptance and Use of Technology (Venkatesh et al. 2003) and the theory on the Diffusion of Innovations (Rogers, 1962)(Patil et al. 2017). Because of the importance of these theories in later research, we will first briefly go through them before focusing on research that is more specific to mobile payment adoption.

Rogers' (1962) theory on the Diffusion of Innovations (IDT) aims to explain how a product or an idea spreads through a specific population or social system so that at the end it has been fully adopted. One key element of Rogers' theory is the categorization of consumers as different kinds of adopters: innovators, early adopters, early majority, late majority and laggards. While it is important to understand that the adopters' characteristics have an impact on the adoption pace, the IDT simplifies the complexity of innovation diffusion. For example, there can be instances when those, who by their characteristics are laggards, adopt a new technology first, and vice versa as people's attitudes vary depending on the context (Lyytinen & Damsgaard, 2001).

The Technology Acceptance Model (TAM) proposed by Davis (1989) suggests that the actual use of a new system is determined by the intention to use the system, which in turn is defined by perceived usefulness and perceived ease of use of the technology in question. The model in itself is very simplified and does not take specifically into account factors like the social influence, the users' demographic or personal innovativeness. These are only referred to as external variables in the model (Davis, 1989).

Plenty of later research has tried to further develop the TAM to make it more suitable for the context of technology adoption. One of these attempts was by Davis and Venkatesh (2000) as they created the Extended Technology Acceptance Model (TAM2), which included multiple additional factors to determine the perceived usefulness of a technology (Venkatesh & Davis, 2000). Regardless of the simplicity or the model, it has been very popular as the base of multiple research for its flexibility and applicableness (Sharp, 2006).

The Unified Theory on Acceptance and Use of Technology (UTAUT) (Venkatesh et al. 2003) was created to form a unified model for information technology research. It combined eight prominent models in the field including the previously mentioned IDT and TAM. While the TAM did not consider the users' characteristics like age or gender, the UTAUT includes them as moderating

variables in addition to experience and voluntariness of use (Venkatesh et al. 2003) also used in TAM2.

UTAUT and TAM are, in terms of constructs and relationships, very similar but UTAUT takes more variables into consideration (Dwivedi et al. 2014) which could imply that it is more used also in research on mobile payment adoption. However, literature reviews on the topic show that over half of the research utilizes the TAM and its extensions while only around a fifth use UTAUT and its extended versions. The popularity of the TAM over the UTAUT might be explained by its flexibility as it is easier for researchers to add their own preferred variables to it. Additionally, the original UTAUT was created to research employees' acceptance of company technology rather than consumer acceptance (Patil et al. 2017; Karsen et al. 2019).

2.3 Security as a barrier

One of the earlier researches on consumer acceptance of mobile payment was a qualitative research focusing on Finnish consumers by Mallat (2007). The research identified perceived risks, specifically security, as a significant barrier, which is in line with the findings of more recent research (Oliveira et al. 2016; Liébana-Cabanillas et al. 2017; Al-Okaily et al. 2020). Interestingly, not all research agrees with the importance of perceived risk. Two of the most cited studies regarding mobile payment acceptance contradict its significance: Kim et al. (2009) and Schierz et al. (2010). Kim et al., who created their theory based on the TAM (Davis, 1989), didn't take perceived risk into account at all, while a research by Schierz et al. (2010), which focused on German consumers, found the link between perceived security and acceptance to be weak. This contradiction might be explained by cultural differences as consumer attitudes also depend on the cultural context (Bankole & Bankole, 2017). However, a more recent study (Beutin & Harmsen, 2019) found that Germans are actually very concerned about security issues. The same study also shows that consumers generally trust their banks and are more concerned about a third party stealing or hacking their device.

2.4 Innovativeness and social influence

Personal innovativeness is considered in a lot of research (He et al. 2007; Kim et al. 2009; Oliveira et al. 2016), but both Liébana-Cabanillas et al. (2017) and Humbani & Weise (2018) found it to be rather insignificant. Personal innovativeness was thought to have an impact especially on the

perceived ease of use and perceived usefulness which in turn positively impacts the intention to use mobile payment. Liébana-Cabanillas et al. (2017) did confirm the relation between innovativeness and perceived ease of use but not perceived usefulness. In the same study, the impacts of perceived ease of use and intention to use was rejected, implying that personal innovativeness is rather unimportant.

Kim et al. (2009) on the other hand considered innovativeness as an important variable and contributed to the mobile payment acceptance research by classifying users into two types: early and late adopters. This classification was done based on which of the given statements the research participants felt described them best. Compared to Rogers' (1962) Innovation Diffusion Theory this classification is quite simplified. While this kind of rough classification may lead to missing some things, it is also compact and can be very useful for marketing purposes.

I am willing to take risk	Early adopter
I am interested in new technology	
I tend to be first in buying new products	
I am kind-of cosmopolitan	
If someone else did it first, it might be all right	
Adopting may be an economic necessity	Late adopter
Adopting may be a result of peer pressure	
I still feel uncertain about new technology	
Everyone else has done it, should I?	
I am suspicious of changes	

Figure 1. Mobile payment user classification (Kim et al. 2009)

It is important to recognise that early adopters do not just accept mobile payment easier themselves but that they also act as opinion leaders in their social circle. They can encourage others to adopt the technology by giving them evaluative information (Kim et al. 2009; Oliveira et al. 2016). Therefore, it is particularly useful for service providers to identify the early adopters and target them (Kim et al. 2009; Schierz et al. 2010).

2.5 Impacts of age and gender

In addition to the UTAUT (Venkatesh et al. 2003), plenty of more recent research on mobile payment takes consumer characteristics like age and gender into consideration. Liébana-Cabanillas et al. (2014) found that external influence has much more impact on older (+35 years old) users as they are

less confident with technology than young users. Young users also show higher levels of trust and ease of use than older ones. One explanation for this can be that they are more familiar with sharing information on social networks (Liébana-Cabanillas et al. 2014; Barnes, 2006).

Shao et al. (2019) established that females are less likely to take risks than males and that they face greater anxiety with new activities. They also found that the application's reputation and mobility were more important to males and customization and security were more important to females. Humbani & Wiese (2018) on the other hand found that gender moderates only the impact of convenience on the adoption, as males put a little bit more emphasis on it.

2.6 Mobile payment during Covid-19

As the Covid-19 pandemic is still ongoing, there is very little research on its impacts on technology acceptance. Sreelakshmi et al. (2020) are among the first ones to research the impacts of Covid-19 and perceived hygiene to mobile payment adoption. The assumption is that people will start to create new ways of social distancing in addition to avoiding physical contacts and sanitizing hands. There are two ways that mobile payment can help social distancing. Firstly, mobile payment can make online consumption easier and promote it over offline consumption (Sreelakshmi et al. 2020; Liu et al. 2020). This does not however directly apply in Finland as people had already made a lot of online purchases using also other payment methods prior to the pandemic (Paytrail, 2018).

Secondly, paper currency should be replaced with contactless technology to enhance hygiene (WHO, 2020). Sreelakshmi et al. (2020) see this as an opportunity for mobile payment to rise. As already noted previously, this does not apply to Finland the same way it applies to India, which Sreelakshmi et al. researched. In Finland we have a well-established way of contactless payments using credit or debit cards (Nets, 2020), which means there is less circumstantial need for in-store mobile payment usage. However, even contactless card payments face limitations: reading the chip and giving the pin code is occasionally required and the limit for contactless payment is 50 euros. In-store mobile payment does not have these limitations and it can be used entirely without touching the payment terminal (Pivo, 2020; MobilePay, 2020; Nordea, 2020), making it more hygienic.

3 Methodology

This is a qualitative research conducted in the form of interviews. The object of my research is to gain an understanding of consumer attitudes towards in-store mobile payment. Interviews as a method support the objective as they can provide a deeper understanding of the attitudes than, for instance, quantitative questionnaires (Gill et al. 2008).

3.1 Sampling

For the target population I chose people between the ages of 18 and 25. This age group belongs to the first half of Generation Z (Fernández-Cruz & Fernández-Díaz, 2016) and can be characterised as tech-savvy digital natives, who have grown up in the digital world (Grail Research, 2010). Gen Z can be seen as potential early adopters of technology, which is why it is important to investigate their attitudes towards in-store mobile payment.

The interviewees were chosen from the aforementioned age group and from the researcher's social circle. All of them are from the Helsinki metropolitan area. The fact that the researcher and interviewees knew each other beforehand might have an impact on the results. However, the impact is likely to be positive since the goal was to get to know the underlying attitudes, which can be more easily done when rapport has already been established (Gill et al. 2008).

The interviewees were chosen using purposive sampling (Etikan et al. 2016) knowing that they had prior basic understanding of mobile payment services and so that there would be a variety of attitudes. The interviewees were purposefully chosen so that one had never used in-store mobile payment, one uses it occasionally and one on a daily basis. The differences between the interviewees guarantee a broader findings. It is worth noting that when searching for interviewees it was hard to find people from both ends of the spectrum; apparently most in the researcher's social circle are occasional users.

3.2 Interviews

The interviews were semi-structured as that enabled asking for clarification as well as following up on interesting answers and findings that the researcher might not have thought of beforehand (Barriball & While, 1994). The interviews were conducted in Finnish as it is the mother tongue of all interviewees and this ensured that they could best express themselves. The interviewees were

guaranteed anonymity with the exception of noting their age, gender and general life situation. All interviews were recorded and transcribed afterwards. Each interview was approximately 30 minutes long and took place during October and November in 2020. Due to the Covid-19 situation the interviewees were given the choice to participate in the interview either in person or via Google Meet. Two of the three interviews were conducted in person and one remotely. Remote interviews might have an impact on how openly the interviewee discusses his/her thoughts as face-to-face communication is often more natural. On the other hand, the remote interview allowed the interviewee to be at their own home which can make them feel more comfortable (Wilson, 2012).

The interview questions were drafted prior to the interviews but were not sent to the interviewees beforehand. The questions were designed so that they would take into consideration the following aspects of mobile payment acceptance: perceived ease of use, perceived usefulness, social influence, personal innovativeness, intention to recommend, perceived risk and perceived hygiene. Most of the questions were open-ended to let the interviewees express their thoughts as freely as possible (Gill et al. 2008). Additionally, the framework by Kim et al. (2009) was used to classify the interviewees into early or late adopters. The interviewees were also given the possibility to bring up any other thoughts at the end of the interview to make sure nothing was left unsaid. For the interview questions, see Appendix 1.

3.3 Analysis

As the interviewees represent three different user types of mobile payment services, unique findings, that were not common with the other interviews, came up. Because of this, the results of each interview will first be discussed separately. For the summary, common themes were analysed by doing a qualitative thematic analysis (Braun & Clarke, 2006). This method is useful as it allows a lot of flexibility in the analysis, while giving a rich and detailed picture of the interview data. For this research a deductive approach was used for the analysis. This was done since existing research has already suggested important factors to consider in mobile payment adoption research and the questions themselves were structured by focusing on specific themes.

The following steps, recommended by Braun & Clarke (2006), were taken:

1) **Getting familiar with the data:** All interviews were recorded and later transcribed, which already meant familiarizing oneself with the data. Later the transcripts were carefully read multiple times to gain an even better understanding of the data.

2) **Creating initial codes:** The interviews were read in order starting from the first one and creating codes simultaneously. Many codes were refined during the process. The codes were marked with different colours in the transcript and numbered in a separate list. For the exact codes used, see Appendix 2.

3) **Searching for themes:** As the deductive approach was used, the themes were mostly based on the previously mentioned perceived ease of use, perceived usefulness, social influence, personal innovativeness, intention to recommend, perceived risk and perceived hygiene.

4) **Reviewing themes:** In addition to the aforementioned themes, two new themes were recognized in the reviewing phase: "motivators to increase use" and "attitudes towards the alternative". Appendix 2 also shows how the different codes were organised under the themes.

5) **Defining and naming the themes:** Even though the previously mentioned themes could be kept separate, some were so strongly linked that they were combined to be discussed together in the result summary. For instance, social influence, personal innovativeness, and the intention to recommend are discussed together as they are intertwined.

6) **Producing the report:** The report was built based on the defined themes and can be found in Chapter 4.4 as the summary of the interview findings.

4 Results

4.1 Interview 1

In the first interview I discussed mobile payment with a 22-year-old "Chloe", who has now been in working life for 4 years. Chloe has applications suited for mobile payment and does all peer-to-peer transactions with her phone. She also uses her mobile for in-store payments on a weekly basis but wouldn't leave the house without her wallet. One of the very first things Chloe expressed in the interview was the feeling of uncertainty with in-store mobile payment:

> *"There is something uncertain* [with in-store mobile payment]. *There is a feeling why you would never want to leave with only your phone, in any case you always have your wallet with you. And even if you had your phone closer you still surprisingly often take out your wallet and pay with a card."*

When asked to further elaborate on the uncertainty, Chloe explained that there is a sense of fear about if the mobile payment does not work after all, which is why she wants to have her payment card just in case. However, she also said that in-store mobile payment had always worked for her just fine. The hypothetical situation in which the payment does not work, makes Chloe feel both awkward and annoyed. To avoid the possible awkwardness, she uses her phone more often at self-service counters where there is no hurry or a line of customers waiting right behind her. In regular counters she prefers a debit card.

Chloe also said that she uses mobile payment almost solely in grocery stores and very seldom anywhere else. This is partially because if something approaches the 50-euro limit of contactless card payments, she does not feel comfortable paying it with her phone as she feels even more uncertain. The limit of 50 euros however does not apply for mobile payment (Pivo, 2020; MobilePay, 2020; Nordea, 2020). Chloe's hesitation towards paying larger amounts with her phone therefore implies limited knowledge on mobile payment.

We can see from Chloe's answers that the uncertainty she associates with in-store mobile payment is the biggest barrier for her to start preferring mobile over card payments. Previous research on mobile payment adoption does not seem to take performance uncertainty into consideration as a factor of its own. It is however included in perceived risk or perceived trust in multiple studies (Mallat, 2007; Liébana-Cabanillas et al. 2014; Humbani & Wiese, 2018; Al-saedi et al. 2020). Both mostly focus on

security concerns so performance uncertainty could be a factor worth researching on its own in more depth.

4.2 Interview 2

The second interviewee, "Sally", is a 22-year-old university student doing her master's degree. She, like the other interviewees, had prior knowledge of mobile payment. Sally uses her phone for both peer-to-peer and online mobile payment but has never tried out in-store mobile payment even though she has a suitable application already downloaded in her phone. She described herself as someone who is very aware of information security and does not adopt new innovations until a majority is using them. Sally told that this also applied to adopting contactless card payment and peer-to-peer mobile payment in the past.

The fact that Sally does not use in-store mobile payment even though she already has a suitable application with her card credentials on her phone is interesting. She explained it by saying that she just does not see the point in paying with a mobile device as contactless card payment is already convenient enough. Sally also pointed out that she has never seen any of her friends use in-store mobile payment or talk about it, which shows that social influence is significant in her case. It also confirms the finding by Liébana-Cabanillas et al. (2017) that perceived ease of use alone is not enough to achieve adoption even though it can have impact on e.g. perceived usefulness (Schierz et al. 2010).

While Sally does not find in-store mobile payment necessary, her biggest issue with it seems to be security:

> "*It's always a risk if you have an app that is linked to your money. - - If someone gets a hold of your phone, they can also pay with it quite easily. Versus if someone wanted to pay with your card, they would need to steal your card, which might be more difficult because your phone is much more on display."*

She expressed concern regarding losing the device or getting it stolen as well as hackers. Sally's fear is not only about accessing her finances but also other personal information that could be misused. Nevertheless, she later during the interview started to think out loud how mobile payment might even be more secure after all. Contactless payment can be used instantly after possessing a payment card, while with a phone you first need to know the security code.

Sally brought up that mobile payment might not be compatible with her everyday life as she can often go to the corner store without her phone, only with a wallet. She also noted that she often uses her phone to, for instance, listen to music while at the store and does not want the music to get disturbed by using her phone for paying. Like Chloe, Sally also shows a lack of knowledge about mobile payment as paying with the phone does not interrupt other activities. However, to look for knowledge would require Sally to be more invested in in-store mobile payment, which she currently is not.

4.3 Interview 3

Lastly, I interviewed "James", a 23-year-old university student, who is also in the middle of his master's studies. James is very familiar with mobile payment services and uses his phone for in-store payments almost daily. He started to use in-store mobile payment after his father recommended it to him, which reinforces the significance of social influence (Kim et al. 2009; Oliveira et al. 2016). When asked about his own attitude towards new technology, James described it in the following way:

> *"I don't perhaps have the biggest desire to try out new technologies but it's not that I'm afraid to, I just can't bother before I realise that it's easy. I use things that somehow make my life easier. - - But it might take a while before I realise that something is actually more convenient."*

James told that he uses mobile payment for its convenience: you might often have your hands full at the store and mobile payment only requires you to get your phone and use one hand. He also pointed out that in-store mobile payment comes with benefits like having multiple cards directly available to choose from and a possibility for electronic receipts. Additionally, James said that in-store mobile payment feels even a little bit more secure if compared to contactless card payments because of the device's fingerprint recognition.

Even though he uses his phone for daily purchases, James still always carries his wallet with him. When asked why this is, James identified two reasons. Firstly, he has set a limit for the amount he can pay for with a mobile device, which is why James needs a card with larger purchases. However, he also mentioned that due to habit, a larger purchase feels more official when paying with a card. Another reason for having his wallet is that it holds James' ID and bonus cards. A physical ID is currently still needed in Finland on many occasions, but bonus cards are being integrated into mobile wallets more and more (MobilePay, 2020; Pivo, 2020). However, James uses Apple Pay for in-store mobile payment and it does not support K-plussa, S-etukortti or Lidl Plus (K-plussa 2020; S-kanava

2020; Lidl 2020). So, to make James less reliable on a physical wallet, Apple Pay could add these bonus cards to its service or MobilePay and Pivo could market this benefit of their services more.

4.4 Summary of common themes

The interview questions focused on the following factors: perceived ease of use, perceived usefulness, social influence, intention to recommend, personal innovativeness, perceived risk, and perceived hygiene. In addition to these, the attitudes towards the alternative, i.e. contactless card payment, was also a significant topic that arose in the interviews. Security and social influence came up the most and seem to have the biggest impact on in-store mobile payment adoption in the case of these three interviewees. The overall poor in-store mobile payment acceptance in Finland was reasoned with the convenience of contactless card payment.

4.4.1 Perceived ease of use and usefulness

Regarding the perceived ease of use, all three interviewees thought that in-store mobile payment service is easy to set up and start using. Of course the fact that all already have suitable applications in use has an impact on this thought. Chloe added that the phone model impacts ease of use: the finger recognition in her old phone did not work properly so she would not use in-store mobile payment because of the additional effort it required compared to a card.

All three interviewees thought that the biggest advantage of in-store mobile payment is its convenience. Chloe said that the usefulness of mobile payment becomes especially apparent when making only a small purchase and wanting to get out of the store quickly. James noted that in-store mobile payment is most convenient when your hands are full, because only one hand is needed for mobile payment. In fact, he added that when both hands are free, there is no difference in the convenience of mobile payment and contactless card payment. Sally recognized the convenience by noting that there is no need to carry a wallet if paying with mobile. Interestingly both Chloe and James said that they always carry their wallet even though they use in-store mobile payment.

4.4.2 Attitudes towards card payment

While mobile payment was seen as convenient, so was its alternative: contactless card payment. Both Chloe and James thought that Finns are not adopting in-store mobile payment because contactless card payment is convenient enough, sometimes even more so. Even though both use in-store mobile payment relatively often, Chloe and James noted that large purchases feel safer and more official

when paid with a card. Card was also seen as at least a good back-up if the phone gets lost or the battery dies. Chloe said that while mobile payment is quick and easy, it would take a long time for her to completely give up physical cards.

4.4.3 Perceived risk: security and uncertainty concerns

Chloe was the only interviewee to bring up uncertainty about the functioning of in-store mobile payment. Otherwise the topics regarding perceived risk were security related. The presented concerns had more to do with the fear that the device might get lost or stolen rather than the fear of unsecure payments. In fact, none of the three interviewees thought that there was anything unsecure in the transaction itself. Sally did however bring up a fear of getting hacked. Moreover, she was clearly the interviewee with most concerns about security and the topic was most discussed with her. Even though both Chloe and Sally were concerned about concentrating all into one device, they had different fears about it. Chloe expressed the fear of losing both her phone and way to pay if her phone got lost while Sally was more concerned about the possible misuse of the information in her phone.

With James, security was touched upon only briefly and he had only positive things to say about the security of in-store mobile payment. He trusts it very much as his phone can only be accessed with his fingerprint. Both James and Chloe also brought up the possibility to use flight tickets from Apple Wallet but the latter said she would never leave without a printed boarding pass just in case. James on the other hand was merely glad that he no longer needed to print out the tickets. These findings do seem to reinforce the finding of Shao et al. (2019) that females are more reluctant to take risks. Nevertheless, it is impossible to make any generalisations as the scope of this research is small and discusses three very different in-store mobile payment users.

4.4.4 The role of social influence and personal innovativeness

Regarding security Chloe mentioned that *"even if there could be something shady in mobile payments, if everyone else uses it, why not?"* This really underlines the significance of social influence in the adoption of in-store mobile payment. Sally, who has never used in-store mobile payment pointed out that she has never got the idea to do that from anyone. Only one or two of her friends pay with a mobile device, which is why she does not see it as something she should try. She also wondered if Finnish consumers are more hesitant towards in-store mobile payments because we

do not have enough "trend setters" in Finland. Venkatesh et al. (2003) found that in voluntary contexts, such as this one, social influence is insignificant. However, we can see that in both Sally and James' cases the recommendation of others, mainly friends and family, is indeed important.

The interviewees were asked to choose the sentences they most identified with from the framework of Kim et al. (2009) (See figure 1). They only saw the sentences and not the division into early and late adopters. Sally identified herself as a late adopter both in the framework and verbally in the interview, which further explains why she has yet to try in-store mobile payment. Interestingly, also James identified as a late adopter, even though out of the three interviewees he has best adopted in-store mobile payment. He stated that he does not really see the need to try out new innovations because his father will do so first and report whether something is worth trying or not. Nevertheless, James can be seen as an early adopter in regard to in-store mobile payments. Out of the three interviewees Chloe was the only one to identify as an early adopter, which can be seen also from her other answers. Even though she is still hesitant towards using only mobile devices for in-store purchases, Chloe also noted that very few of her close ones use in-store mobile payments at all, making her a pioneer in her social circle.

As the significance of social influence and the recommendation of others has now been established and early adopters can be opinion leaders in their social circle (Kim et al. 2009; Oliveira et al. 2016) it is valuable to look at their intention to recommend mobile payments to others. Neither James nor Chloe had recommended in-store mobile payment to anyone. Chloe explained that she would not really know how to recommend it as it seems to be something that people adopt gradually at their own pace, like contactless card payments. James pointed out that payment methods are not a regular conversation topic and that he would only recommend mobile payment if someone asked about it.

4.4.5 Perceived hygiene in the context of Covid-19

When discussing the impacts of Covid-19, none of the participants said that it had affected their attitudes toward paying or payment methods. All said that cash feels unhygienic but none of them had used cash in a long time. Chloe however did mention that the pandemic has affected the amount of money she spends and that it could have an indirect impact also on in-store mobile payments:

"If you use only your local store for small purchases, you use mobile more often." (Chloe)

When it comes to hygiene both James and Chloe mentioned that it can be a little bit unpleasant if you use a card and you are asked to touch the payment terminal to insert pin code. Nevertheless, neither of them saw this as a real issue or a reason to choose mobile payment over a card. Sally thought that in-store mobile payment might be more unhygienic than card payments if you touch the terminal with your phone and then put it on your ear. This however is again a question of knowledge about the method, as mobile payment can be carried out without touching the terminal at all (Visa, 2020).

One reason behind these answers is most likely the common usage of contactless card payment in Finland: in-store mobile payments are not seen as significantly more hygienic. Another factor could be the young age of the interviewees. According to a press release by MobilePay (2020) most of their new customers are aged between 35 and 44, which could indicate that the population that has been more concerned about the coronavirus are older than the focus group of this research. Sreelakshmi et al. (2020) found that perceived susceptibility and perceived severity of Covid-19 have a significant positive impact on the adoption of mobile payments. The fact that Covid-19 is severe mainly among the elderly (Finnish Institute for Health and Welfare, 2020) could possibly also have an impact on the attitudes of the interviewees.

4.4.6 Motivators for increased use of mobile payments

When asking what would motivate an increased use of in-store mobile payment both Chloe and James brought up bonus cards as the usefulness would grow with these additional features. Sally is interested in tracking her consumption, which is why she would be more motivated to use in-store mobile payment if it gave her a possibility to get some additional information about her habits:

> *"If it was to analyse, at what time you go to the store and how much you buy at what time and stuff like that." (Sally)*

Additionally, as previously mentioned, the use of in-store mobile payment in the social circle would increase Sally's willingness to try paying with her phone. She also mentioned the lack of advertisements on the matter, which could mean that more marketing would lead her to start using mobile payment.

5 Discussion and conclusions

Table 1. Summary of main findings

Theme	Main findings
Perceived ease of use	Depends on phone model Found to be positive by all interviewees Not enough alone to lead to adoption
Perceived usefulness	Convenience the most significant advantage Increased with smaller purchases and when only one hand free Not enough alone to lead to adoption
Attitudes towards card payment	Contactless payment is convenient enough > the point of switching to mobile payment is not clear to all Preferred for large purchases
Perceived risk	Most significant barrier Concerns about the device getting lost or stolen, hackers and misuse Transactions themselves are perceived as secure Uncertainty about the performance of in-store mobile payment
Social influence	Recommendation of others plays a key role Seeing close ones use mobile payment motivates own use
Personal innovativeness	Social influence found more significant than personal innovativeness Significant when social influence is not very significant
Intention to recommend	No intentions to recommend were found > Payment methods not a common topic to discuss > Not enough knowledge to be able to recommend
Perceived hygiene	Not significant in choosing a payment method
Motivators to increase use	Bonus cards linked to mobile payment service Social influence Consumption tracking

This research found that both perceived ease of use and perceived usefulness are significant factors in the adoption of in-store mobile payments. They are not, however, significant enough alone to lead to adoption. Also Liébana-Cabanillas et al. (2017) found that perceived ease of use is not linked with adoption. The possible impact of phone models came up regarding ease of use which implies that phone type should perhaps also be taken into consideration in further research.

With two of the three interviewees the impact of social influence was found particularly significant, reinforcing the findings of Oliveira et al. (2016) and contradicting Venkatesh et al. (2003). Personal innovativeness was found somewhat significant but less so than social influence. However, in one of the interviews personal innovativeness was found more significant than social influence. Likewise to Mallat (2007), Oliveira et al. (2016), Liébana-Cabanillas et al. (2017) and Al-Okaily et al. (2020), perceived risk was identified as the most significant inhibitor of mobile payment adoption. The security concerns discussed were about the device getting lost, stolen, or hacked and all three interviewees displayed trust in the actual transaction, as was also found in the study by Beutin & Harmsen (2019).

Besides Sreelakshmi et al. (2020) perceived hygiene has not been previously taken into consideration in mobile payment research but should be from now on as the Covid-19 pandemic will likely have some kind of an impact on the way we consume and pay. Even though this research did not show a significance of perceived hygiene, it should be further researched in different contexts and with a larger sample before dismissing it.

5.1 Implications to practice

A valuable thing that mobile payment service providers can do is to find a way to differentiate from contactless card payments. This could be done by putting even more emphasis on the convenience, which was identified as one key advantages of in-store mobile payments. Additionally, the hygiene of in-store mobile payment services could be marketed during these times. In two of the three interviews a lack of knowledge became apparent. Correcting misconceptions and raising awareness about how mobile payments work would show consumers that the advantages outweigh the concerns.

The lack of awareness about in-store mobile payments is especially evident in the case of security. Security concerns were found as the biggest inhibitor of in-store mobile payment adoption, but mobile payment can actually be more secure than card payment. Firstly, mobile payment always requires some form of identification unlike a card, which can be used straight away for contactless payment.

Secondly, mobile payments have security measures protecting against compromised payment terminals, which are a significant enabler of card fraud (Story et al. 2020). Making these existing security measures more visible to consumers would most likely increase mobile payment adoption.

Those service providers, who do not have additional services like bonus cards or consumption tracking, would benefit from introducing such. On the other hand, those who already have these services, like MobilePay and Pivo, should make them more known to potential users to gain traction.

5.2 Limitations and future research

This research was quite limited as it focused only to a certain age group of Finnish consumers. The results might be different with a different sampling, which is why it would be interesting to conduct a similar research to an older sampling for instance. Also the impacts of the Covid-19 pandemic might become more visible with an older sampling. Additionally, all interviewees live in the Helsinki metropolitan area and different attitudes may apply in the rural areas of Finland.

As the Covid-19 pandemic is still ongoing, the data and research available about its impact is still very limited. The effects of the pandemic to payments in general and specifically mobile payment services should certainly be researched more in depth in the future. It would be beneficial to conduct a quantitative survey to gain a broader understanding about consumer attitudes regarding payments in the context of a pandemic.

This research focused solely on in-store mobile payment but it could be interesting to compare consumer attitudes towards different aspects of mobile payments. For instance, all the interviewees in the research use peer-to-peer but not in-store mobile payment. It could be very eye-opening to evaluate the reasons behind this difference.

This research discussed three different kinds of in-store mobile payment users: non-user, occasional user, and daily user. It would be interesting to further interview and research consumers representing only one of these types. With daily users it would be very beneficial to consider the user's intention to recommend the technology which could further explain why Finnish consumers are not adopting in-store mobile payment in the large part.

References

Al-Okaily, M. et al. (2020) 'The Determinants of Digital Payment Systems' Acceptance under Cultural Orientation Differences: The Case of Uncertainty Avoidance', Technology in Society, 63(August).

Al-saedi, K. et al. (2020) 'Developing a general extended UTAUT model for M-payment adoption', Technology in Society, 62(September 2019), p. 101293.

Au, Y. A. and Kauffman, R. J. (2008) 'The economics of mobile payments : Understanding stakeholder issues for an emerging financial technology application', Electronic Commerce Research and Applications, 7, pp. 141–164.

Bankole, O. O. and Bankole, F. O. (2017) 'Telematics and Informatics The effects of cultural dimension on ICT innovation: Empirical analysis of mobile phone services', Telematics and Informatics, 34(2), pp. 490–505.

Barnes, S. B. (2006) 'A privacy paradox : Social networking in the United States', First Monday, 11(9).

Barriball, K. L. and While, A. (1994) 'Collecting data using a semi-structured interview: a discussion paper', Journal of Advanced Nursing, 19, pp. 328–335.

Beutin, N. and Harmsen, M. (2019) Mobile Payment Report 2019. PwC. Available at: https://www.pwc.de/de/digitale-transformation/deutsche-verbraucher-bezahlen-seltener-per-smartphone-als-ihre-europaeischen-nachbarn.html.

Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology Using thematic analysis in psychology', Qualitative Research in Psychology, 3, pp. 77–101.

Davis, F. D. (1989) 'Perceived usefulness, perceived ease of use, and user acceptance of information technology', MIS Quarterly: Management Information Systems, 13(3), pp. 319–339.

de Kerviler, G., Demoulin, N. T. M. and Zidda, P. (2016) 'Adoption of in-store mobile payment: Are perceived risk and convenience the only drivers?', Journal of Retailing and Consumer Services, 31, pp. 334–344.

Deloitte (2019) Chasing cashless? The Rise of Mobile Wallets in the Nordics. Available at: https://www2.deloitte.com/content/dam/Deloitte/dk/Documents/financial-services/Downloads/Chasing_Cashless-The_rise_of_Mobile_Wallets_in_the_Nordics.pdf.

Dwivedi, Y. K. et al. (2011) 'A meta-analysis of the unified theory of acceptance and use of technology (UTAUT)', in IFIP Advances in Information and Communication Technology, pp. 155–170.

Etikan, I., Musa, S. A. and Alkassim, R. S. (2016) 'Comparison of Convenience Sampling and Purposive Sampling', American Journal of Theoretical and Applied Statistics, 5(1).

Fernández-Cruz, F.-J. and Fernández-Díaz, J. (2016) 'Teachers Generation Z and their Digital Skills', Media Education Journal, 46(24), pp. 97–105.

Finnish institute for health and welfare (2020) Risk groups for severe coronavirus disease. Available at: https://thl.fi/en/web/infectious-diseases-and-vaccinations/what-s-new/coronavirus-covid-19-latest-updates/risk-groups-for-severe-coronavirus-disease (Accessed: 30 November 2020).

Gill, P. et al. (2008) 'Methods of data collection in qualitative research: interviews and focus groups', British Dental Journal, 204(6), pp. 291–295.

Grail Research (2010) 'Consumers of Tomorrow - Insights and Observations About Generation Z'.

Humbani, M. and Wiese, M. (2018) 'A Cashless Society for All : Determining Consumers ' Readiness to Adopt Mobile Payment Services', Journal of African Business, 19(3), pp. 409–429.

ISACA (2011) 'Mobile Payments: Risk, Security and Assurance Issues', (November), p. 15. Available at: https://www.isaca.org/Groups/Professional-English/pci-compliance/GroupDocuments/MobilePaymentsWP.pdf.

Karsen, M., Chandra, Y. U. and Juwitasary, H. (2019) 'Technological factors of mobile payment: A systematic literature review', Procedia Computer Science, 157, pp. 489–498.

Kesko (2020) K-Plussa. Available at: https://www.plussa.com/Mika-on-K-Plussa/#Plussa-kortit-ja-maksaminen (Accessed: 28 November 2020).

Kim, C., Mirusmonov, M. and Lee, I. (2010) 'An empirical examination of factors influencing the intention to use mobile payment', Computers in Human Behavior, 26(3), pp. 310–322.

Lidl (2020) Lidl Plus. Available at: https://www.lidl.fi/lidl-plus (Accessed: 28 November 2020).

Liébana-cabanillas, F. et al. (2017) 'Technological Forecasting & Social Change Predicting the determinants of mobile payment acceptance : A hybrid SEM-neural network approach', Technological Forecasting & Social Change, 129 (December 2017), pp. 117–130.

Liébana-cabanillas, F., Sánchez-fernández, J. and Muñoz-leiva, F. (2014) 'Antecedents of the adoption of the new mobile payment systems : The moderating effect of age', Computers in Human Behavior, 35, pp. 464–478.

Liu, T., Pan, B. and Yin, Z. (2020) 'Pandemic , Mobile Payment , and Household Consumption: Micro-Evidence from China', 56(10), pp. 2378–2389.

Lyytinen, K. and Damsgaard, J. (2001) 'What's Wrong with the Diffusion of Innovation Theory? - The case of a complex and networked technology', IFIP Advances in Information and Communication Technology, 59.

Mallat, N. (2007) 'Exploring consumer adoption of mobile payments – A qualitative study', Journal of Strategic Information Systems, 16, pp. 413–432.

MobilePay (2020) MobilePaylla voi maksaa myös 50 euron lähimaksurajan ylittävät ostokset koskematta käteiseen, kortteihin tai maksupäätteeseen. Available at: https://www.mobilepay.fi/artikkelit/2020/04/27/lahimaksurajan-ylittavat-ostokset-mobilepaylla (Accessed: 25 November 2020).

MobilePay (2020) 'Lehdistötiedote 25.06.2020: MobilePayn vuosipuoliskon kasvuluvut'. Available at: https://www.mobilepay.fi/materiaalit/lehdisto/lehdistotiedotteet/lehdistotiedote-25062020-mobilepayn-vuosipuoliskon-kasvuluvut-2020

Nets (2020) Pandemic accelerates contactless payment adoption in the Nordics, Nets. Available at: https://www.nets.eu/Media-and-press/news/Pages/Pandemic-accelerates-contactless-payment-adoption-in-the-Nordics.aspx (Accessed: 24 November 2020).

Nets (2020) Payments Outlook. Available at: https://www.nets.eu/Innovation/payments-outlook-2020

Nordea (2020) Kysymyksiä ja vastauksia Apple Paystä. Available at: https://www.nordea.fi/henkiloasiakkaat/palvelumme/verkko-mobiilipalvelut/kysymyksia-ja-vastauksia-applepay.html#faq=Kysymyksia-ja-vastauksia-Apple-Paysta+305840 (Accessed: 25 November 2020).

Oliveira, T. et al. (2016) 'Mobile payment: Understanding the determinants of customer adoption and intention to recommend the technology', Computers in Human Behavior, 61(2016), pp. 404–414.

Patil, P., Dwivedi, Y. and Rana, N. (2017) 'Digital Payments Adoption: An Analysis of Literature', Digital Nations - Smart Cities, Innovation & Sustainability, pp. 276–288.

Paytrail (2018) Finnish e-commerce. Available at: www.paytrail.com/report

Pivo (2020) Pivo - Usein kysytyt kysymykset. Available at: https://tuki.pivo.fi/fi/articles/3923428-kuinka-isoja-ostoksia-voin-maksaa-pivon-lahimaksulla (Accessed: 25 November 2020).

Rogers, E. M. (2007) 'Diffusion of Innovations', Agriculture and Human Values, 24(3), pp. 37–50.

Schierz, P. G., Schilke, O. and Wirtz, B. W. (2010) 'Understanding consumer acceptance of mobile payment services: An empirical analysis', Electronic Commerce Research and Applications, 9(3),

pp. 209–216.

Shao, Z. et al. (2019) ‘Antecedents of trust and continuance intention in mobile payment platforms: The moderating effect of gender’, Electronic Commerce Research and Applications, 33(August 2018), p. 100823.

Sharp, J. H. (2006) ‘Development, extension, and application: A review of the technology acceptance model’, Proceedings of the Information Systems Education Conference, ISECON, 23(January).

Sreelakshmi, C. C. and Prathap, S. K. (2020) ‘Continuance adoption of mobile- based payments in Covid-19 context: an integrated framework of health belief model and expectation confirmation model’, 16(4), pp. 351–369.

S-ryhmä (2020) Valitse juuri sinulle sopiva S-etukortti. Available at: https://www.s-kanava.fi/asiakasomistaja/setukortti (Accessed: 28 November 2020).

Story, P. et al. (2020) ‘From intent to action: Nudging users towards secure mobile payments’, in Proceedings of the 16th Symposium on Usable Privacy and Security, SOUPS 2020. The Advanced Computing Systems Association, pp. 379–416.

Venkatesh, V. et al. (2003) ‘User Acceptance of Information Technology: Toward a Unified View’, MIS Quarterly: Management Information Systems, 27(3), pp. 425–478.

Visa (2020) Any way you tap to pay, Visa is there for you.
Available at: https://usa.visa.com/pay-with-visa/contactless-payments/contactless-payments.html#How_close_does_my_card_or_device_need_to_be_to_the_contactless_checkout_terminal_-a6fa (Accessed: 30 November 2020).

Viswanath, Venkatesh and Fred D., Davis (2000) ‘A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies’, Management Science, 46(2), pp. 186–204.

Wilson, V. (2012) ‘Research methods: Interviews’, Evidence Based Library and Information Practice, pp. 96–98.

Appendices

Appendix 1: Interview questions

1. What kind of thoughts come to mind about the concept of in-store mobile payment?

2. Which of the following statements best describes your attitude towards new technology? (by Kim et al., 2009)
    a. I am willing to take risk
    b. I am interested in new technology
    c. I tend to be the first in buying new products
    d. I am kind-of cosmopolitan
    e. If someone else did it first, it might be all right
    f. Adopting may be an economic necessity
    g. Adopting may be a result of peer pressure
    h. I still feel uncertain about new technology
    i. Everyone else has done it, should I?
    j. I am suspicious of changes

3. What applications, that are suitable for mobile payment, do you have on your phone?

4. For what purpose do you use the aforementioned application(s)?

5. How often do you use in-store mobile payment, on estimate?

6. a) *If never*: For what reason have you never tried to pay with a mobile device in-store?
    b) *If occasionally*: In what kind of situations do you pay with a mobile device in-store?
    c) *If daily*: In what kind of situations would you not pay with a mobile device in-store?

7. What factors most impact your choice of payment method?

8. What do you think are the advantages of in-store mobile payment?

9. a) *If used never or occasionally*: Why do you consider other payment methods better than in-store mobile payments?
    b) *If used daily*: Why do you consider in-store mobile payments better than other payments methods?

10. What reasons do you believe are behind the resistance of Finnish consumers towards in-store mobile payment?

11.
    a) *If used never or occasionally*: What would motivate you to utilise in-store mobile payments (more)?
    b) *If used daily*: What originally motivated you to use in-store mobile payments?

12. Do the habits and attitudes of others / your close ones impact your payment habits? If yes, how?

13.
    a) *If used never*: Has anyone ever recommended in-store mobile payments to you?
    b) *If used occasionally or daily*: Have you ever recommended / could you imagine recommending in-store mobile payments to others?

14. How do you see the security of in-store mobile payments?

15. How do you see the ease of use of in-store mobile payments?

16. Has the Covid-19 pandemic changed your attitudes towards paying or payment methods? If yes, how?

17. Does the assumed hygiene have an impact on your choice of payment method?

18. Does anything else come to your mind?

Appendix 2: Codes and themes for the analysis

Table 1. Themes and codes within them

Theme	Codes in the theme
Perceived ease of use	1, 2, 10
Perceived usefulness	3, 4, 5
Attitudes towards the alternative	6, 7, 8, 9, 10, 17
Perceived risk	11, 12, 13, 14, 15, 16, 17
Social influence	18, 19, 20, 21, 22, 23
Personal innovativeness	24, 25
Intention to recommend	26, 27, 28
Perceived hygiene	29, 30, 31
Motivators to increase use	19, 32, 33, 34

Table 2. Specific codes

Number	Code
1	Ease of use depends on phone model
2	Mobile payment was very easy to take into use
3	Mobile payment is more convenient than card payment
4	Mobile payment is more convenient only if hands full in the situation
5	No need to carry a wallet if you pay with your phone
6	Bigger purchases lead to preferring card payment
7	Physical card is a good back up
8	Contactless card payment is very common in Finland
9	Card payment is convenient enough

10	In some situations, card is easier to use than mobile payment
11	Something uncertain about mobile payment
12	Risky to have everything in the same place
13	Phone can be hacked into or get stolen
14	If someone gains access to your phone, they can do a lot of damage
15	Mobile payment itself feels secure
16	Always risky having an application connected to your money
17	Mobile payment feels more secure than card payment
18	Mobile payment not used in social circle
19	Would use more if everyone else started using mobile payment
20	Not enough trend-setters in Finland
21	Nobody has recommended mobile payments
22	Mobile payment used by close ones
23	Use due to the recommendation of others
24	No big enthusiasm to try out new technology
25	Started using other similar technology later than average
26	Has not recommended mobile payments to anyone
27	Would not know how to recommend mobile payments
28	Paying or payment methods is not something you talk about
29	Nothing particularly unhygienic about card payment
30	Hygiene is the same with mobile payment and contactless card payment
31	It is a little unpleasant having to put the pin code sometimes with a card
32	If bonus cards were linked, would use mobile payment more
33	Consumption tracking would motivate use
34	Advertising in-store mobile payment would increase willingness to try